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SURGICAL CASES, FROM THE RECORDS OF THE CITY HOSPITAL, BOSTON.

[Reported for the Boston Medical and Surgical Journal by DAVID W. CHEEVER, M.D., one of the Visiting Surgeons.]

Tenth Paper.—THREE CASES OF DISLOCATION AND FRACTURE OF THE SPINE. TREPHINING THE SPINE, IN ONE CASE.

CASE I.—*Dislocation of the Fifth and Sixth Cervical Vertebræ.*—June 15th, 1866. Michael B., æt. 21. At 7½ o'clock last evening patient was swinging upon a chain across the back of a wagon, when he lost his balance, fell backwards, and struck upon his head and neck. He did not lose his consciousness, but was unable to move his body or extremities. Some officious friends applied a blister to his neck. He entered the Hospital at 10½, A.M. Pulse 60 and full. Respiration quiet, but wholly abdominal. Diaphragm contracting well. Head thrown back. Slight priapism. Paralysis of sensation and motion of entire person below the nipples anteriorly, and below the seventh cervical vertebra posteriorly. Slight sensibility just above elbows, increasing as you ascend. No reflex action. Body warm. Retention of urine and fæces. Patient could rotate his head through an arc equal to one fourth of a circle, and could move it somewhat forwards and backwards, though nodding occasioned pain. He could also bend his neck laterally, but slightly.

The seventh cervical vertebra, and all below it, appeared to be uninjured. The fifth and sixth cervical, over which there was an effusion and swelling, seemed abnormally elastic on pressure. The vertebræ above could not be felt. No crepitus.

Patient was carefully put to bed, and his urine drawn. At half past one, P.M., his pulse was 48; at three, 44; at night, 56 to 64, and irregular. Speaks of tingling below elbows.

June 16th.—Pulse 64; respiration distressing and more frequent, averaging 36. No thoracic respiration; chest as still as a marble statue. Diaphragm working less forcibly. Amount of air inspired is small. Action of heart labored. Tympanites of abdomen. No

facial paralysis. Mind perfectly conscious. Swallows and talks well. Entire paralysis of arms, legs, trunk, bladder, &c.

5, P.M.—Pulse more irregular, and feebler; respiration 32; expiration noisy. Eats gruel. Moves his head from side to side. Talks incoherently. Speaks slowly, with great effort to articulate; words lagging.

8, P.M.—Respirations 28; pulse 50; both irregular and interrupted. Speaks with extreme effort.

9½, P.M.—Respiration gradually became slower and more shallow, until he died—fifty hours after the accident. No autopsy allowed.

CASE II.—*Probable Dislocation, and perhaps Fracture, of the lower Cervical Vertebræ.*—Sept. 20 h, 1866. Mr. N. B., a caulker, of middle age, while overseeing his men early in the morning, some frost having formed during the night, slipped while crossing from a ship to the wharf, and fell down between them. It being low water at the time, the distance fallen must have been considerable. He fell into the water and dock-mud, striking, as he fell, on the back of his neck, on a fender at the side of the vessel. His groans attracting attention after a short time, he was taken up, quite conscious, but paralyzed entirely below the neck. He was now conveyed in a carriage several miles to his home, and I saw him about 12 o'clock.

He was sitting propped up in a chair, with his legs raised upon a second chair, to prevent his sliding down upon the floor. His thorax was flexed upon the pelvis; his neck was bent forwards, and his arms hung helpless by his sides. He was quite conscious; protruded his tongue straight and easily; his pupils were normal; his pulse feeble and rather slow. He said he had no feeling below his neck.

His wet clothes were cut off, and he was carefully put to bed—his head propped on a pillow in the position he desired. Warmth was applied to the feet and to the surface of the body; stimulants were given; his urine drawn off. He was rolled on to his side, and the back examined. Tenderness and effusion were found over the posterior cervical region. It seemed as if the vertebræ just above the seventh cervical were depressed forwards. No mobility nor crepitus could be felt. Paralysis, both of sensation and motion, was total below the neck. The respiration abdominal. There was partial priapism. He was evidently in a state of shock.

6, P.M.—Strong reaction had come on. His pulse was full and slow; the body warm and moist; the mind perfectly clear and active. Paralysis was entire. A small amount of urine was drawn off. The walls of the thorax were perfectly motionless. The diaphragm was working forcibly. No symptoms of cerebral lesion.

Sept. 21st.—At 5, A.M., I was called to him in haste and found him sinking. His respiration was slow and imperfect; his skin livid; the pulse feebler and slower; the mind affected by venous blood; mucus had collected in the bronchi, and could not be expecto-

rated. His pulse and respiration grew slower and fainter until he died, about twenty-four hours after the receipt of the injury. No autopsy.

According to Mr. Alexander Shaw,* "It is a melancholy fact that, in general, when the spinal cord is destroyed in the upper dorsal and the cervical regions, the main question is, merely, how many days is the patient likely to survive the fatal injury? In such cases the principal cause of mortality is the greater or less interruption to the operation of breathing.

"The whole series of intercostal muscles, as well as the abdominal parietes, will be paralyzed. To explain how the process of respiration can be carried on in that defective condition, it has been thought sufficient to affirm, without discussion, that it is effected by the diaphragm exclusively. It is said that the phrenic nerve, which controls that muscle, emerging from the spinal canal above the fourth cervical vertebra, while it remains uninjured, will cause the diaphragm to contract; and when it relaxes, the weight and elasticity of the abdominal parietes will cause it to recede into the thorax, and expiration will take place.

"But between the fourth and fifth cervical vertebræ emerges the external or long thoracic nerve, the external respiratory nerve of Bell, which supplies the serratus magnus muscle. That muscle has a strong inspiratory power, when the shoulders are fixed. And as a certain tendency exists in the diaphragm, owing to its attachments to the ribs, when it contracts powerfully, to depress and draw together the lower margins of the thorax, the counteracting power of the serratus must exercise an important influence in making inspiration perfect.

"It may, therefore, be concluded that, in fractures of the vertebræ of the neck, if the spinal cord retains its function as low as the sixth, the diaphragm will have the coöperation of the serratus magnus muscle. And that assistance will be valuable for expiration as well as inspiration; for in proportion as the thorax is more elevated, it will descend with greater force by its elasticity, in expiration, and so expel the air from the lungs more effectually.

"Very frail, however, is the tenure by which a patient who has suffered fracture of the cervical vertebræ holds life. The causes which cut him off early are twofold:—

"1st. Owing to paralysis of the abdominal muscles, tympanites of the abdomen comes on and pushes up the diaphragm.

"2d. The mucus naturally secreted in the air-passages accumulates, owing to the inability of the patient to expel it by coughing. The blood becomes imperfectly oxygenized, and death is ushered in by coma."

Case III.—*Fracture of the Laminæ and Spines of the second and third Dorsal Vertebræ, and of the Spines of the fourth and fifth; total*

* Holmes's Surgery, vol. ii. p. 212.

Paralysis below the Nipples; Trephining of Spine, with Restoration of Motion and Sensation; subsequent Emphysema of Chest, and Death, apparently, from Pneumothorax.—Jan. 14th, 1867. A. B., æt. about 40, while at work just after the noon rest, fell from a considerable height and struck upon his back and occiput. He was taken up conscious, but paralyzed in the legs and trunk. He became gradually more unconscious and feebler.

When I saw him, at half past two, P.M., his pulse was quite feeble, and his respiration very small and entirely with the diaphragm. He could be easily roused to consciousness. There was no stertor. His pupils were contracted. There was partial priapism and retention of urine. The legs and trunk entirely helpless. The extremities warm. Bruising, and crepitation of broken bone were very evident between the scapulæ. He objected to having his head moved at all. He appeared to be suffering from shock, partial concussion of the brain, and pressure on the upper dorsal portion of the spinal cord. His pulse and respiration were failing, and it was evident that he must soon sink, unless relieved. He refused to swallow, but was stimulated by alcoholic enemata.

Having in my mind the miserable end of the cases just related, I had determined to trephine the spine, should another similar accident present itself. This patient had a perfectly evident fracture of the vertebral column in the upper dorsal region—a region more favorable for operation than the neck. If anything were to be done, it must be done immediately.

The patient was turned partially over upon his face, and an incision made over the fracture. The finger now entered a bruised and softened space, in which could be felt the broken ends of several spinous processes. On dissecting down upon and removing these, the laminæ were found to be broken. Segments of the arches of four vertebræ were removed with the trephine, elevator and tooth-forceps. The cord was now freely exposed, and seemed intact in its membranes, except a small spot at the upper border of the wound, where an appearance, which might be a laceration, presented itself. There was free venous hæmorrhage, but it ceased spontaneously. The rough edges of the laminæ were trimmed off with the gnawing forceps. The cord appeared to be free from pressure, both above and below the wound. No injury of the head was found. But emphysema began to appear on the right side and front of the thorax. The condition of the patient did not undergo much apparent change. The wound was left open. He was placed in a semi-supine position in bed, and stimulated, alternate hours, with alcoholic and beef-juice enemata.

Jan. 15th, 9, A.M.—Entirely conscious; protrudes tongue; swallows; talks. Pulse 108, considerably fuller. *Respiration* 30, *and thoracic;* every intercostal muscle seen to be contracting well in inspiration. Some dyspnœa. Emphysema moderate, under pectoralis

major of right side. Chest tympanitic. Respiration obscure. Priapism gone. Can feel slight touch with finger as low down as knee, but not lower. No hæmorrhage from spinal wound. Has been able to hold interviews with his wife and family.

From this time he began to fail. The pulse ran up to 160. The respiration became very rapid and distressing; the thoracic muscles moved with the diaphragm to the last. The breathing was short and catching, as if the lung were oppressed, but not paralyzed. He died about twenty-four hours after receiving the injury. No autopsy could be obtained; but there seems reason to conclude that he died of fractured or dislocated ribs, wound of the costal and pulmonary pleuræ, and pneumothorax, since his respiration, pulse, and mode of death differed totally from the other cases. They died with a pulse of 40, and a respiration growing slower and slower. He died with a pulse of 160, and a spasmodic and exceedingly rapid breathing.

Trephining the spine and raising the depressed laminæ restored the inspiratory power of the intercostal muscles and relieved the diaphragm; it restored, also, the trunk and thighs to sensibility.

If no lesions had existed in the chest, there would seem to be reason to have hoped for a favorable result. Immediate death from pressure on the nervous centre was averted, at any rate, and life prolonged. Reasons enough, surely, to follow up the operation of trephining the spine in an uncomplicated case.

Why should we not accept the only alternative from sure and speedy death which can be offered us? And especially so since Dr. Brown-Séquard, as we understand him, gives a certain percentage of recoveries, and considers the operation less dangerous than trephining the skull.

CEREUS GRANDIFLORA, CACTUS GRANDIFLORA (Linn.), NIGHT-BLOOMING CEREUS, SWEET-SCENTED CACTUS, &c.

By A. F. Pattee, M.D., Boston.

[Communicated for the Boston Medical and Surgical Journal.]

Natural Order—Cactaceæ.

Generic Characters—Stem creeping and rooting five to eight angles; flowers terminal and lateral, very large, showy; sepals brown on the outside, yellow within; petals white, spreading, shorter than the sepals.

Specific Distinction—Flowers bloom by night, commencing at twilight, withering as night advances, close and die before the dawn of day. Stem branching, armed with numerous clusters of spines. The stem is mucilaginous.

Habitat—Mexico and West Indies, and cultivated in Spain, Italy and some tropical countries, and hot-houses of the United States.

History.—The plant was used by the natives of Mexico previous to the conquest, for the cure of numerous diseases, such as intermittent fever, irritation of the urinary organs, and other maladies incident to the country. It was introduced into Germany as a therapeutic agent by Dr. Scheele, and lately brought to notice by Dr. Rubini.

Physiological Effects.—This cactus is sedative to the nervous and circulatory systems, and acts on the kindeys. Given in the regular medicinal doses, repeated at the proper intervals, and gradually increased if necessary, it is found to diminish the frequency of the pulse, and increase the secretion from the urinary organs largely; it is of great service in the treatment of dropsical diseases. In large doses it is irritant to the stomach, and has a peculiar effect upon the brain, producing mental confusion, hallucination and slight delirium.

Remedial Employment—*Diseases of the Heart.*—The cactus was recommended as a specific in diseases of the heart, and it is in this disease that it has been used almost exclusively. That it has a very decided action on the heart we are well satisfied. It relieves irritation of this organ, whether dependent on local causes or due to reflex action from disorders of the stomach, lungs, or other viscera. The following case will illustrate its use in a complicated functional heart affection.

Mr. D. W., æt. 60; married; father of several children; health always good; an inveterate smoker. In January, 1866, he was troubled with palpitation, with irregularity of the heart's action on the slightest exertion, and great dyspnœa on lying down. His physician pronounced the case to be one of structural disease, and told the patient he was liable to die at any time. The disease continued to progress, the lower limbs becoming anasarcous; he was examined by a number of prominent physicians, who concurred with the attending physician with regard to the diagnosis and prognosis. We advised him to try the tincture of cactus in five-drop doses three times a day in water, and discontinue all other medicine. He commenced taking the medicine Oct. 1st, 1866, and with the most happy effect; the dyspnœa gradually disappeared, the limbs gave up their water, and at the present time the patient is able to rest all night in the horizontal position, and the action of the heart has become regular. I have used this remedy in many other well-marked cases, with much benefit to the patient.

This remedy is contra-indicated in diseases of an inflammatory nature with acute symptoms. In cardiac rheumatism, combined with bi-carbonate of potash, I have found the cactus worthy of confidence. In the condition of the heart which is generally associated with anæmia, and in which the tissue of the organ is enfeebled by defective nutrition, the cactus is indicated, in combination with chalybeates, the mineral acids and other tonics, to improve the character of the blood. An important incidental advantage in these cases is, frequently, its

effect in removing the dropsical effusion, whether in the pericardium, the other serous cavities, or the general areolar tissue.

Functional Palpitation of the Heart.—Perhaps in no affection does cactus act more favorably than in palpitation, either from plethora, anæmia, or merely nervous disorder; but the remedy is applicable only to the cases in which the affection has a certain degree of permanency, and not at all to those occasional and fugitive attacks which occur under passing excitements.

Administration.—The tincture is preferred, as it is supposed to keep better; and, in order to ensure uniformity, it should be *saturated.* Take of the fresh stem and flowers of the cactus four ounces, ninety-five per cent. alcohol one pint; macerate for one month and filter. The dose of this tincture is from one to five drops three times a day; if no effect is produced upon the disease in the course of three or four days, the dose should be gradually increased until unequivocal symptoms of its operation are manifested.

We believe, in conclusion, that if the profession will test the virtues of the cactus, there will be few who would be willing to dispense with its use.

GUN-SHOT WOUNDS OF THE PELVIC VISCERA.

Wurzburg, January 2d, 1867.

Messrs. Editors,—While acting as voluntary assistant surgeon in one of the temporary military hospitals in this city, during the months of August, September and October of the past year, I had occasion to observe several hundred cases of more or less interesting gun-shot wounds, among which were three injuries of the pelvic viscera, which, on account of the dangerous and rather rare nature of the wounds, appear to me worthy of description. My attention was perhaps attracted the more to them since, during a service of about six months in one of our large military hospitals during the late rebellion, I did not happen to see a single case of perforating gun-shot wound of the pelvis; and here, in a small hospital of barely 150 beds, I met with three instances at the same time.

Case I.—Johann Graef, bugler of the 8th battalion of rifles, Bavarian Army, 27 years of age, was wounded by a bullet from a Prussian needle-gun, July 26th, 1866, at the battle of Rossbrunn, a village distant some ten English miles from Würzburg. The ball had entered the right nates at the upper and inner portion of the greater sacro-ischiatic foramen, doubtless pierced or torn away one side of the rectum, passed through the base of the bladder and emerged on the right side of the scrotum; for, on his arrival at the hospital on the night of July 31st, we found the urine running freely from the anterior wound, the scrotum enormously distended and gangrenous from the presence of the urine in the cellular tissue, and the fæces

protruding from the posterior opening. The sufferings of the patient were so severe that he begged the attendants to shoot him. There was no discharge of fæces from the anterior wound, which fact leads me to believe that only the right side of the rectum was injured; for if the ball had pierced the centre of the intestines, the fæces would have passed equally through both openings.

An attempt had been made on the field to catheterize the man, but in vain, the catheter absolutely refusing to enter the bladder. Cold compresses and one quarter of a grain of morphine were ordered; the dose of morphine not allaying the pain, it was thrice repeated, after which the patient passed a tolerably quiet night. The next day the pain was again so intense that, after several doses of morphine in powder and by means of subcutaneous injection had been administered without success, recourse was had to chloroform, by which the patient was kept in a condition of semi-consciousness. To remove the constipation enemata were tried, but without success, the injection flowing out at the posterior opening. On Aug. 2d he was placed in a warm bath, in which he expressed himself much relieved, remaining in it over four hours. The baths were repeated every day as the only means of relieving his sufferings, but their result surpassed all expectation. They promoted the discharge of the gangrenous parts, which were thrown off August 9th, leaving the left testicle intact, but only partially covered with sound skin. At the right side of the penis, immediately below the pubic arch, the urine could be seen trickling through a small opening, which admitted the passage of a probe into the bladder. Denuded bone was not to be felt, either through the anterior or posterior opening. When not in the warm bath, the wounds were treated with cold-water compresses, and the adjoining parts covered with simple cerate, to prevent excoriation by the urine. He now began to show some appetite, and was allowed fish, eggs, and a glass of wine daily. He could sleep after only one dose of one quarter of a grain of morphine now, and there appeared some hope of his recovery. Two small abscesses which formed on the hand and thigh were opened, and healed readily. An attack of pain, swelling and heat in the right inguinal region was removed by leeches and warm-water compresses, and the condition of the patient improved from day to day. During one of the baths he had a voluntary operation of the bowels per anum, and they were henceforth kept regular by means of enemata or laxatives.

About Aug. 20th the left testicle was nearly covered by skin, the anterior opening had become exceedingly small, and at times the urine could be passed through the urethra. Micturition being painful and the urine appearing highly ammoniacal, injections of warm oil into the bladder were made with good results. The catheter could be passed without difficulty. He was now allowed full diet and a tumbler of wine and one of beer per day.

Aug. 26th, he complained of pain in the right lumbar region, ac-

companied by fever. We apprehended an acute nephritis, but were glad to see all symptoms disappear after applying hot-water compresses for two days and enforcing low diet. Towards the end of August the warm half-baths, which had been suspended for a few days, as they appeared to debilitate the patient somewhat, were replaced by a daily warm sitz-bath, which had the same cleansing and salutary, without the debilitating effects. The temperature of the baths at first was between 95° and 100° F., and was gradually reduced to about 80°. These sitz-baths were continued, with occasional intervals of a few days, until the patient left the hospital. The posterior wound was now healed, but, as the result proved, only temporarily.

During the first week of September he began to walk about the ward, and finally felt well enough to accept the invitation of the monks in the adjoining monastery to a glass of beer. The wound was occasionally touched with the stick of nitrate of silver, and was entirely closed about the middle of September, the urine passing freely through the urethra and the bowels being regular; the remaining testicle was perfectly covered by sound skin.

Sept. 22d, the posterior wound again opened, discharging fæces and pus, but after touching with nitrate of silver it soon closed again, and, October 1st, appeared healed.

The appetite of the patient was very good, so good indeed that, notwithstanding orders to the contrary, he contrived to smuggle in eatables, and finally was seized, during the night of October 10th, with a violent fit of vomiting, by which both wounds were opened again, the posterior as well as the anterior one discharging urine. A collection of pus was found in the canal of the posterior wound, which was evacuated by means of an incision. Injections of a solution of nitrate of silver (gr. iv. to ʒ i.) were made into the posterior wound twice daily, and resulted in total closure of the canal by the 1st of November; the anterior opening had been touched with the solid caustic and had closed within a few days after the accident.

To make sure of a permanent cure, the patient was kept in the hospital till the first week in December, taking an occasional sitz bath; as the wound remained closed, and the man was able to walk about the city and felt as well as before his wound, he was discharged. He has since written, and reports himself as continuing well.

In this case the warm baths undoubtedly were chiefly beneficial in relieving the pain and cleansing the wounds, whereas the cold-water compresses, first stimulating by means of the cold and then promoting the multiplication of cells and consequently granulation by means of the moist warmth, hastened the healing of the injured parts.

Case II.—Joseph Handwerger, private, 13th regiment, Bavarian Infantry, 25 years of age, was wounded by a Prussian bullet at Uettingen, a village a short distance from Rossbrunn, on July 26th. The ball entered in the region of the left greater sacro-ischiatic foramen,

passed transversely through the pelvis, probably injuring the rectum in its middle portion, and emerged on the right side at a spot corresponding to the point of entrance, without touching the bone. When brought to the hospital, July 31st, large quantities of frothy fæces passed freely from both wounds, which therefore required very frequent dressing. The patient was obliged to lie on his belly, which position he occupied almost exclusively during the first three weeks after entrance. The wounds were treated with cold-water compresses, an easily digestible diet was ordered, and the bowels were kept rather loose by means of laxatives. The general condition of the patient was good, and there were no signs of peritonitis or enteritis. August 8th, the patient had a violent chill, which was treated with aconite, two grains of the powdered extract being given every four hours; the rigor was repeated on the 11th, and three-grain powders of aconite were administered. Whether these had any effect I do not pretend to say; at all events the patient had no return of the chill, and improved visibly from day to day, the discharge of fæces ceasing sometimes from one wound and sometimes from the other for a day or two; both wounds had a fresh, florid appearance, with slightly callous edges.

Aug. 20th, he was placed in a warm bath, which relieved him very much and appeared to promote the activity of the bowels; it was accordingly continued, with appropriate intermissions of a day or two, until his discharge. An œdema of the lower extremities, which occurred about this time, was removed by compression with a roller bandage.

Sept. 3d, there was a natural and copious evacuation of the bowels, no fæces having been discharged from the wounds for several days. On the 6th, however, in consequence of an attempt to walk, in the absence of the surgeon, a profuse fæcal discharge from both wounds again took place, with violent febrile symptoms, which were speedily removed by a warm bath. Perfect quiet being enjoined, the wounds again resumed their healthy appearance, the left one especially healing so rapidly, that by September 12th it was entirely closed, and remained so till after his dismission. From this time forth no more fæces were discharged from the right wound, the bowels partly operating voluntarily and partly being kept regular by means of laxatives. But as the pus from the wound was mixed with bubbles of air, there must still have been a communication with the intestine. As the wound appeared rather indolent and indisposed to heal, it was first treated with hot compresses of chamomile tea, which materially improved its appearance, and then injections of nitrate of silver (gr. iv. to ʒ i.) were made twice a day; these, although acting slowly, still fulfilled their object and brought about the almost entire closure of the wound by the 5th of November. Soon after, the patient began to walk about, and, calling at the hospital during the last week of November, I was informed by the surgeon

in charge that he had been discharged perfectly well a few days before.

I have heard, to my regret, within a day or two, that after the wounds had remained closed for six weeks, they opened again about a fortnight ago—probably in consequence of imprudence of some kind—and are now both discharging fæcal matter.

Case III.—Jacob Dachsbacher, private, 5th regiment Bavarian Infantry, 27 years of age, was also wounded at Uettingen, July 26th, the bullet taking almost the same course as in Case II., with the exception that it appeared to have entered on the right side and to have touched the rectum a little higher up in the concavity of the sacrum than in the previous case.

On his entrance, July 31st, the wounds discharged only pus; a few days after, however, the pus was mingled with fæces, which passed from both wounds. Cold-water compresses and light diet were ordered; enemata given through a long rubber tube were regularly followed by easy stools. August 20th, warm sitz baths were commenced and continued daily for three weeks, with the very best results, the right or entrance wound being almost healed and the fæces being discharged exclusively per anum. About the middle of September, both wounds were perfectly closed. The patient's right leg, however, was almost powerless, which fact causes me to believe that the ischiatic nerve has been injured or bruised near its exit from the great sacro-ischiatic foramen. On account of this latter trouble, the patient was retained in the hospital, and various stimulating applications were made without effect. About the middle of October both wounds again broke open, and showed the existence of canals of some depth, the left one especially allowing the introduction of a common silver probe up to the eye. No fæces or air were discharged, however. The left wound was closed by means of injections of nitrate of silver; a collection of pus appearing near the right wound, it was evacuated by an incision, and a seton was passed through the two openings and left *in situ* during a fortnight. This proceeding brought about the closure of the wound, and apparently, also, acted as a stimulant on the nerve; for, on visiting the patient a few days ago, I found both wounds apparently firmly closed, and the man able to move across the room with the help of a cane; whereas, before, he had hardly been able to lift the leg. Paul Munde, M.D.

The Imperial Society of Bordeaux offers a gold medal of the value of 500 francs for an exhaustive memoir on the subject of embolism, especially in relation to the sudden deaths of puerperal women. The proportion of sudden deaths in different diseases, and especially in the puerperal state due to emboli, are to be duly set forth. The essays, written in French or English, are to be sent in by August 31, 1867.—*New York Medical Journal.*

CLINIC OF BERKSHIRE MEDICAL COLLEGE.

(Continued from page 504.)

Strumous Conjunctivitis.—Margaret D., æt. 10. Severe inflammation of conjunctiva; has also granular lids; ulcers on the cornea; is sometimes costive. *Treatment.*—Give first an alterative. ℞. Hyd. cum creta, gr. xv.; sodæ bicarb., ℈ iss. M. Divide in chart. No. vii. One to be taken every night. ℞. Acid. tannici, ʒ i.; glycerin., ʒ i. M. Apply locally morning and night.

Came again to clinic one week afterwards, very much improved; ulcers healing finely; not so much intolerance to light. *Treatment.*—Change from alteratives to tonics, as the great indication is to improve the general system. ℞. Potass. iodid., ʒ i.; ferri ammonio-citrat., ʒ i.; syrup. sennæ, f ʒ i.; aq. puræ, f ʒ iv. M. A teaspoonful to be taken three times a day. Continue the application of glycero-tannin.

Came again three weeks afterwards, with great improvement, both local and general. Continue treatment.

Carcinoma Uteri.—H. S., æt. 45; married. Has had nine children. Has miscarried three times, the fœtuses being three or four months old; cause unknown. Has had intermittent cough for seventeen years, with frequent hæmoptysis; there is marked anæmia; has had menorrhagia almost constantly for two years. The patient was taken to the ante-room and examined by Prof. Storer. The uterus was found considerably hypertrophied, with little displacement; the os patulous; posterior lip considerably elongated—all resulting, probably, from cancer of the organ. She is subject to various forms of constitutional disturbance, such as severe irritation about the bladder, palpitation, probably on account of the loss of blood, and cough, occurring on account of the sympathy between the uterus and lungs. *Treatment.*—Live well, and pursue a tonic course of treatment. ℞. Ferri sulphat., ʒ i.; quiniæ sulph., ℈ i.; aquæ piperitæ, f ʒ iv. M. A teaspoonful to be taken three times a day.

Diarrhœa.—John L., æt. 17 months. Has been in poor health about three weeks; has always been somewhat constipated, yet seemed well and strong. Still nursing, but not regularly. Attack commenced with considerable diarrhœa and some fever, which has continued until now. At first the discharges were slimy, sometimes greenish, but now are tinged with blood; there has been some tenderness of the abdomen and bloating. Is cutting teeth; has six through, and the bicuspids in the superior maxilla are making their appearance. Prof. Palmer remarked that we have here diarrhœa accompanied by congestion of the small and large intestines; that this is caused partly by the irregular nursing and the introduction of a larger amount of food into the stomach than it can digest well and its passage into the intestines, which causes irritation there—and partly by teething. *Indication.*—To change the secretions and abate

the inflammation. ℞. Mass. hydrargyri, gr. iij.; magnesiæ calcinat., gr. x. M. Ft. in chart. No. v. One to be taken every four hours until three are taken. If they act as a laxative it will suffice, if not give a little castor oil. ℞. Doveri pulv., gr. x. Divide in chart. No. xii. Give one after the third mercurial, and then every four hours. ℞. Sodæ bicarb., ʒ ij. Put one half in a teaspoonful of water, and give a teaspoonful *pro re nata.*

Ulceration of Os Uteri.—Mrs. M., æt. 31 years. Married. Has four children, the youngest about four years of age; has generally been in good health until about five months since, when she began to have pain in the head and stomach; also in the lumbar region, with leucorrhœa. Has had one abortion—about one year since—brought on, as she says, by the aid of instruments. The patient was taken to the ante-room and examined. The uterus was found much enlarged; os ulcerated and patulous. Has profuse hæmorrhage; system much debilitated in consequence of this and shock to nervous system. *Treatment.*—℞. Butyr. cacao, ʒ i.; acid. tannici, gr. v. M. Ft. into four balls. Use one every night. ℞. Ferri sulph., ʒ i.; magnesiæ sulph., ʒ i.; aquæ puræ, f ʒ iv.; acid. sulphuric., q. s. M. Take a teaspoonful twice daily.

Patient returned one week afterwards; says she is much better; has much less gastric irritation and less leucorrhœa. *Treatment.*—An application of argenti nitras made to the os. ℞. Ferri et quiniæ citras, ℈ i. Ft. in pil. No. xviij. Take one three times a day.

Ulceration of Os Uteri.—A. C., æt. 45. Was treated at College clinic, during session of 1865, for Graves's disease. At present, there is no enlargement of the thyroid gland, and the disturbance of the heart has abated. Presents a marked anæmic condition. Has suffered constantly for two years with leucorrhœa, and during the past year has from uterine hæmorrhage. Now, much debilitated, owing, no doubt, to loss of blood. The patient was taken to the ante-room and examined. Uterus found to be enlarged, both cervix and body; os patulous. The cervix is badly abraded; might be called ulcerated. There are large granulations about the os, and probably the hæmorrhage is to a great extent from these granulations. *Treatment.*—℞. Tinct. ferri chloridi, f ʒ ij. Take thirty drops three times a day, well diluted in water. Apply tincture of iron to the ulcerated surface. Patient returned to clinic four weeks afterwards. Has had no hæmorrhage for the past two weeks, but has had very disagreeable sensations about the epigastrium, with considerable headache and dizziness. Does not appear as anæmic as when last here. Prof. Palmer remarked that these unpleasant sensations are a natural consequence resulting from checking the hæmorrhage which has so long been a drain on the system. *Treatment.*—Another application of tincture of iodine to the cervix uteri.

Bibliographical Notices.

Surgical Clinic of La Charité. Lessons upon the Diagnosis and Treatment of Surgical Diseases, delivered in the month of August, 1865, by Prof. Velpeau, Membre de l'Institut et de l'Academie de Médecine, collected and edited by A. Regnard, Interne des Hôpitaux. Reviewed by the Professor. Translated by W. C. B. Fifield, M.D. Boston: James Campbell.

This modest little book contains a statistical *résumé* by the author of his surgical experience in the hospital wards under his care during the previous year. We learn that he is accustomed to present a similar summary to his followers every year. The number of patients on which his statements are based is 1155—797 males and 358 females. He treats his subject under the successive headings, Generalities, Fractures, Affections of the Joints, Inflammations and Abscesses, Affections of the Lymphatic System, Burns and Contusions, Affections of the Genito-Urinary Organs, Affections of the Aural Region, Affections of the Eyes, Statistics of Operations.

This little book, of one hundred and three pages, is full of the condensed wisdom and experience of the great surgeon from whose lips it came. As the translator well says in his preface, it contains "the essence of the long life and vast experience of Velpeau—perhaps the last words he may speak to us." We have a special liking for such works, which give us the most authoritative opinions of the elders of the medical profession, who have reached the time when the judgment is least biassed by the rivalries and personal influences which are so apt to mislead younger minds. The one before us shows that the author has a large respect for the agency of the natural forces in surgery, and contains matter of much interest in the light of medical jurisprudence. It is of vastly more value than many more ambitious and bulky works. It is neatly printed on tinted paper.

A Treatise on the Principles and Practice of Medicine; designed for the use of Practitioners and Students of Medicine. By Austin Flint, M.D., Professor of the Principles and Practice of Medicine in Bellevue Hospital Medical College, and in the Long Island College Hospital, &c. &c. Second Edition, Revised and Enlarged. Philadelphia: Henry C. Lea.

Four months after the publication of this work, as we learn from the preface to the present edition, a second was called for. If we knew the size of the first edition, we could judge better of the amount of public approval which this fact indicates. The second edition contains considerable new matter, relating to Pertussis, General Cerebral Paralysis and Polyuria, subjects which were not treated in the first. In addition, the portion treating of Pyæmia has been re-written, Epidemic Cholera has been treated at greater length, and considerable other new matter has been introduced. The present edition confirms our favorable impression of the first. It is handsomely printed.

An Index of Diseases and their Treatment. By THOMAS HAWKES TANNER, M.D., F.L.S., Member of the Royal College of Physicians, &c. Philadelphia: Lindsay & Blakiston. 1867.

THE author's object in preparing this volume was, as he states, to facilitate the work of the busy practitioner, by enabling him in a few moments to run over a condensed synopsis of the principal features of any disease he may be called upon to deal with, together with a summary of the various methods and agents which have been found of the most practical value in their treatment. In fact, it is a sort of medical dictionary. The last hundred pages consist of an Appendix of Formulæ, numbered in accordance with the references distributed throughout the book, concluding with two pretty full chapters on Climates for Invalids, with brief notices of a number of the noted places resorted to by this unfortunate class—and Mineral Waters, with a particular account of the principal springs, the waters of which are in repute as curative agents. The subjects are arranged in alphabetical order, and the work is well calculated to answer the design of the author.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, JANUARY 31, 1867.

CHEMISTS' CERTIFICATES.

IN calling the attention of our readers, as we have done from time to time, to the dangerous character of many of the articles advertised in newspapers for the cure of diseases, and the reprehensible conduct of the public press in connection with such fraudulent practices, we have hitherto neglected to notice an important element employed in some cases by the manufacturers and agents engaged in this business. Sensible of the distrust with which their productions are regarded by the educated classes of society, they seek to remove all such fears by publishing, with the testimonials of their efficacy, certificates, from parties supposed to be competent and trustworthy, of their harmlessness and purity; and, strange to say, they are too often able to make use of this additional means of deceiving the public.

So little is known of chemistry by the world at large, and so wonderful have been many of its practical results in the arts and in cases of medico-legal celebrity, that its powers are apt to be over-estimated, and the unlimited confidence placed in the science is blindly transferred to all who practise it as an art or business, and call themselves chemists. The possibilities of chemistry, however, even in the matter of simple analysis, are limited, as the merest dabbler in it knows, even if the public does not; and yet if we were to estimate them by the notices emanating from laboratories and published in the newspapers and public places in connection with the vaunted action of all sorts of nostrums, we should be obliged to attribute to them more transcendant powers than the most enthusiastic modern synthesist dreams of. How far in advance of the teachings of the most renown-

ed chemists are the results obtained by those who publish their discoveries under the form of certificates! Orfila, Christison, Taylor, Fresenius, and others acknowledge their inability to detect by any chemical agency the presence of some of the most deadly poisons known, and yet we have before us the published statement of an "analytical chemist," that the chemical analysis of a certain advertised preparation shows that "it is free from opium or any other deleterious substance." But they must go further than this. Not satisfied with the attainment of a knowledge that enables them to determine the absence of all known injurious matter, they can recognize certain positive qualities in this class of substances submitted to them, which chemistry has hitherto not even attempted to embrace in its possibilities. They not only discover their physiological action upon the system, but even the particular pathological condition of the economy which they were created to remedy. We had supposed that these matters were worked out by the patient and united labors of the physiologist, therapeutist and pathologist, and that the test tube was more limited in its scope; but we find another chemist, in the published report of his analysis of an eye lotion, saying that "its effects are due to the cooling and soothing action of the oils on delicate or inflamed surfaces connected with the eyes"; and yet another speaks thus:—"Its principal effects upon the system are mildly stimulating, diuretic, sudorific and tonic. It will prove beneficial in affections of the kidneys, and chronic diseases, with general debility of the constitution."

Now not one of these persons is a physician, or is competent to speak of the physiological action of drugs; and, moreover, they know enough of chemistry to know that, as chemists, they have nothing to do with such matters, and yet instead of making the proper use of their art to instruct the public as to the true character of many of the substances employed as remedies and lotions, they lend the influence of their names, directly or indirectly, to this system of traffic. One has only to look at the preparations offered for sale in the cases of our fancy-goods apothecaries, or read the advertisements in the newspapers, to convince himself of the dangerous nature of many of them. Arsenical lotion for the skin, antimony for the eyelashes, and belladonna for the eyes, would at once attract the attention of the physician, but who knows the composition of the hundred other cosmetics sold under poetical names—the Lait de Concombre for freckles, the Oriental Rusma to remove the hair, the Sympathetic Blush, the Eau de Tuilleries, the Blanc de Perle, the Bleu pour Veines, the coral lip salve, and so on, which may contain substances equally deleterious. The disclosures of a lady's maid recently published concerning the mysteries of the toilet among English ladies of rank, will show the uses to which some of these articles are put.

"We must be able to paint in pastel, not indeed *after* nature, but *upon* her. To beautify our mistresses we must redden the cheeks, put antimony upon the eyelids, pastel upon the brows, introduce belladonna into the eyes in order to enlarge the pupils, paint blue veins upon the temples, and use ninon paint and pearl white upon the rest of the skin. We must change the hair to a reddish-brown by means of a corroding material, or of 'palma vecchio,' which is now used in preference for that purpose; and we must be possessed of great skill

in applying all these ingredients, as their use is universal with the old as well as with the young."

It is no defence for the chemist, in this and other instances, which might be mentioned, where certificates are given for such or equally injudicious purposes, to urge that he is not accountable for the use which is subsequently made of them. Such a plea of irresponsibility will not be accepted by those who respect chemistry and who fully appreciate the character of such pseudo-scientific labors, and of the parties who use them for such unworthy purposes.

Massachusetts General Hospital.—The following gentlemen, students of medicine, have been appointed House-pupils at the Hospital for the ensuing year. In the Medical Department—Herbert Pratt, William James. In the Surgical Department—Thomas Waterman, Jr., Henry H. H. A. Beach, Rufus P. Lincoln, Josiah L. Hall.

American Medical Association.—The Transactions of the American Medical Association, Vol. XVII., are published and ready for delivery. Vols. V., VII., VIII., IX., if taken collectively, $5 for the set; if singly, $2 apiece. Vols. X., XI., XII., XIII. and XIV., at $2 apiece. Vol. XV. at $3; Vols. XVI. and XVII. at $5. Any gentlemen residing in Boston or vicinity can be supplied at the above rates by sending their orders, before the middle of February, to Dr. J. N. Borland, No. 69 Mt. Vernon Street.

The Source of Muscular Power.—Some very important researches upon this subject have been recently published by Drs. Fick and Wislicenus, Professors at the University of Zurich, and also by Dr. Frankland in London. An account of these experiments was given in a lecture delivered at the Royal Institution by the latter chemist during the last session.

It is probable that these investigations will very materially affect the present condition of physiological science, tending, as they do, to entirely change the idea hitherto entertained respecting the relation of food to the requirements of the animal body.

Twenty years ago, physiologists would have attributed the source of muscular power to something peculiar developed by living animals, and termed *vital force*. The progress of scientific discovery, however, rapidly dissipated the very crude notions which then existed regarding this mysterious agency. We now know that an animal, however high its organization may be, can no more *generate* an amount of force capable of moving a grain of sand than a stone can fall upwards, or a locomotive drive a train without fuel. All that such an animal can do is to liberate that store of force, or *potential energy*, which is locked up in its food. It is the *chemical change* which food suffers in the body of the animal that liberates the previously pent-up forces of that food, which now make their appearance in the form of *actual energy*—as heat and mechanical motion. From food, and food alone, comes the *matter* of which the animal body is built up; and from food alone

come all the different kinds of physical *force* which an animal is capable of manifesting.

The two chief forms of force thus manifested are *heat* and muscular motion, or mechanical work. These have been almost universally traced to two distinct sources—the *heat* to the oxidation of the *food*, and the mechanical work to the oxidation of the *muscles*. This doctrine, first promulgated by Liebig, has been within late years adopted by most physiologists, and has been taught in all the text-books treating of the subject. The proximate constituents of food have been frequently divided into two groups—carbonaceous or non-nitrogenous, such as fat, starch, sugar; and the nitrogenous, such as fibrin, albumen, and casein—the former class being regarded as comprising simple *heat givers*, that is to say, substances that furnish material for oxidation in the process of respiration, and thus maintain the temperature of the body; the nitrogenous constituents being the *flesh formers*, or substances building up the muscles of the body, through which motive force is exerted. The exercise of a muscle being accompanied by a proportionate destruction or oxidation of its tissue, it follows that the plastic or flesh-forming constituents of food should bear a relation to the amount of muscular work performed. This theory, viz., that mechanical work, i. e., muscular exertion, is dependent on the destruction of muscular tissue, has been supported by Ranke, Playfair, Draper, and others; and, as we have already stated, it has been generally taught up to the present time. Nevertheless, it has not escaped challenge. Immediately after its promulgation, Dr. J. R. Mayer wrote, "A muscle is only an apparatus by means of which the transformation of force is effected, *but it is not the material by the chemical change of which* the mechanical work is produced." This assertion he supported by several cogent arguments. Other physiologists also expressed similar opinions. Messrs. Lawes and Gilbert advocated a like view, basing their opinions on their own elaborate and carefully executed experiments on the feeding of cattle. The experiments of Messrs. Fick and Wislicenus and of Dr. Frankland, to which we have already referred, however, furnish results which are entirely subversive to the doctrine which has hitherto prevailed, and are almost conclusive in favor of the view expressed by Mayer. Messrs. Fick and Wislicenus, during the autumn of last year, undertook the ascent of the Faulhorn, one of the peaks of the Swiss Alps, near the Lake of Brienze, in the Bernese, Oberland. This ascent represented a measurable amount of mechanical work, i. e., the raising their own weights from the base to the summit. For some hours before commencing, and during the experiment, they consumed no nitrogenous food whatever. As it has been well ascertained that all the nitrogen passes out of the body in the state of urea, they were enabled, by collecting the urine that passed, to ascertain accurately the quantity of nitrogen excreted, and consequently the amount of muscle oxidized during the journey. It only remained to determine whether the amount of force they exerted during the ascent was greater than could possibly be generated by the quantity of muscle oxidized during the same time. If it was, then it would necessarily follow that the power of the muscles was not derived exclusively from the oxidation of their own substance.

The calorimetrical determination of the actual energy evolved by

the combustion of muscle and of urea in oxygen have been made by Dr. Frankland, and the results show that the amount of muscle destroyed by the former gentlemen during their ascent would not account for one half of the force required to lift them to the summit of the mountain. Taking the average of the two experiments, and making several necessary allowances, Dr. Frankland calculates that scarcely one fifth of the energy required for the work could be obtained from the amount of muscle consumed.

Examining a number of previous experiments of a like kind, Dr. Frankland finds them all confirmatory of the same thing. Thus, he gives a summary of three sets of experiments made by Dr. E. Smith, by the Rev. Dr. Haughton, and by Playfair, in which in each case the force expended is in excess of that derivable from the muscle oxidized.

The following are the conclusions deduced by Dr. Frankland from his experiments :—

"1. The muscle is a machine for the conversion of potential energy into mechanical force.

"2. The mechanical force of the muscles is derived chiefly, if not entirely, from the oxidation of matters contained in the blood, and not from oxidation of the muscles themselves.

"3. In man, the chief materials used for the production of muscular power are non-nitrogenous ; but nitrogenous matters can also be employed for the same purpose, and hence the greatly increased evolution of nitrogen under the influence of a flesh diet, even with no greater muscular exertion.

"4. Like every other part of the body, the muscles are constantly being renewed ; but this renewal is not perceptibly more rapid during great muscular activity than during comparative quiescence.

"5. After the supply of sufficient albuminized matters in the food of man to provide for necessary renewal of the tissues, the best materials for the production, both of internal and external work, are non-nitrogenous matters, such as oil, fat, sugar, starch, gum, &c.

"6. The non-nitrogenous matters of food which find their way into the blood, yield up all their potential energy as actual energy ; the nitrogenous matters, on the other hand, leave the body with a portion (one seventh) of their potential energy unexpended.

"7. The transformation of potential energy into muscular power is necessarily accomplished by the production of heat within the body, even when the muscular power is exerted externally. This is, doubtless, the chief and probably the only source of animal heat.—*Druggists' Circular and Chemical Gazette.*

Poisoned Bread at Winona, Ill.—It will be remembered that in July last, at a hotel in Winona, Illinois, a large number of persons were poisoned by eating warm biscuit at breakfast. The case attracted much attention, from the fact, that a few days before, some forty persons were in a similar manner poisoned at a hotel in Indianapolis ; and from the circumstance, that self-raising flour was charged with having produced the poisoning at Winona. The public had not forgotten the bread-poisoning on a large scale in the State of New York, where the metallic lead used to bind the burr-blocks composing the mill-stones had been abraded and mixed with the flour in grinding. The investi-

gation of the Indianapolis case by Professor Wormley, of Ohio, revealed in the sour milk employed, with salæratus, to make the bread light, five and a half grains of tartar emetic and a trace of arsenic, in a single pint. A similar case at Atlanta, Georgia, in which a whole family was poisoned, was traced to arsenic introduced by a servant.

The Winona case was taken up by the physicians and druggists of the place, and prosecuted till they and the victims generally became satisfied that the self-raising flour had nothing to do with the poisoning. The investigation was renewed by Professor Horsford, of Cambridge, Mass., and the results at which he arrived are embodied in the following statement:—

1. That there was substantially no self-raising flour in the batch from which the biscuit were made.
2. That poison was introduced into the biscuit, through the sour milk employed with salæratus, in ordinary flour, to make the biscuit light.
3. That the poison was introduced by design.
4. That the poison was arsenic.—*Medical and Surgical Reporter.*

A Remarkable Solvent.—It is now discovered, it appears, that if a piece of copper be dissolved in ammonia, a solvent will be obtained, not only for lignine, the most important principle of all woody fibre—such as cotton flax, paper, &c.—but also for substances derived from the animal kingdom, such as wool and silk. By the solution of any of these an excellent cement and water-proofer is said to be formed; and, what is equally important, if cotton fabrics be saturated with the solution of wool, they will be enabled to take the dyes—such as the lac dye and cochineal hitherto suited to woolen goods only.—*Exchange.*

VITAL STATISTICS OF BOSTON.

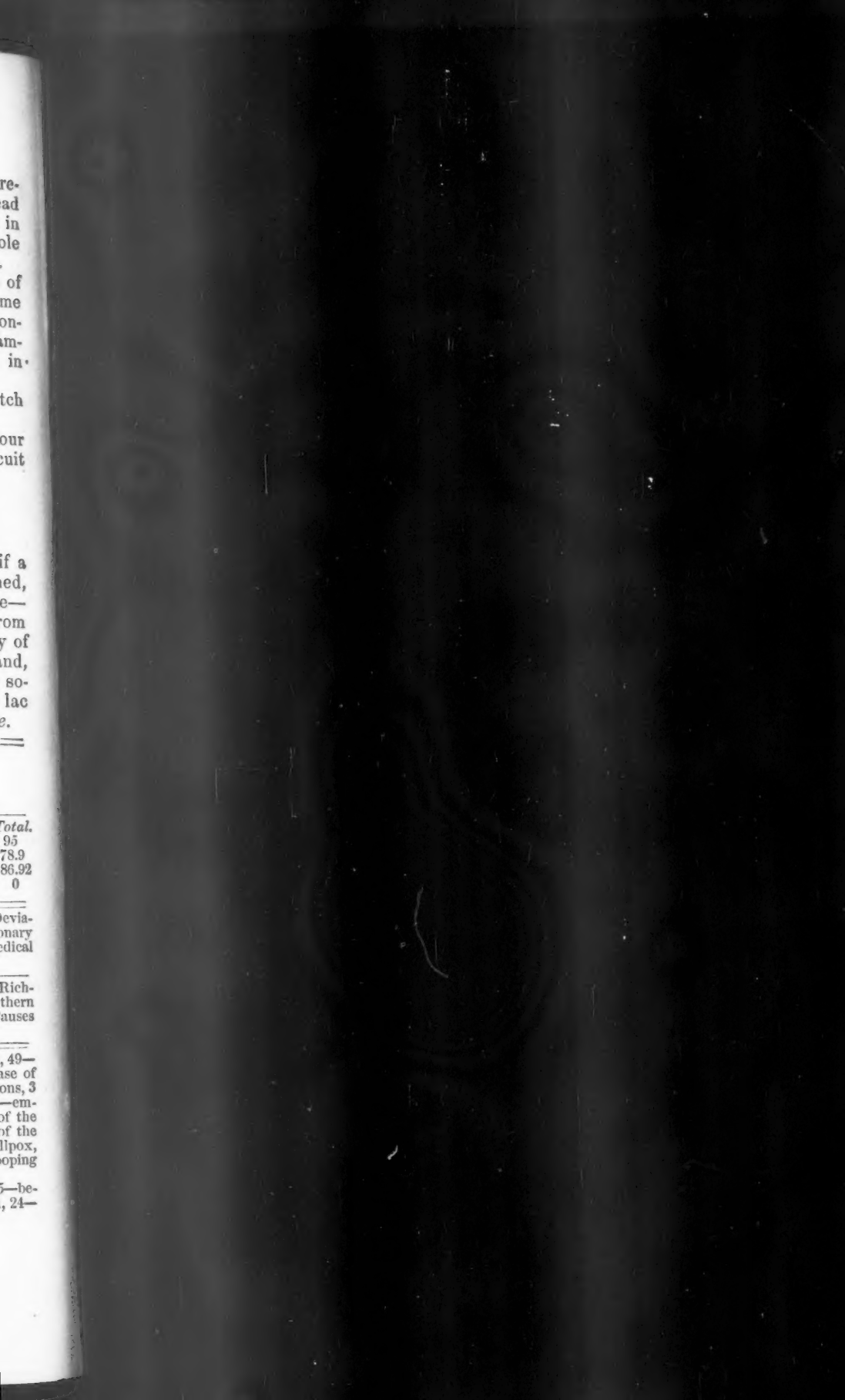
FOR THE WEEK ENDING SATURDAY, JANUARY 26th, 1867.

DEATHS.

	Males.	*Females.*	*Total.*
Deaths during the week - - - - - - - -	49	46	95
Ave. mortality of corresponding weeks for ten years, 1856—1866	40.2	38.7	78.9
Average corrected to increased population - - - - -	00	00	86.92
Death of persons above 90 - - - - - - - - -	0	0	0

COMMUNICATIONS RECEIVED.—Amputation of the Cervix Uteri.—Impotency from Deviation of the Seminal Ducts.—On some of the Means used in the Treatment of Pulmonary Consumption.—Extracts from the Records of the Middlesex (Mass.) East District Medical Society.—Extracts from the Records of the Albany City Hospital.

PAMPHLETS RECEIVED.—Diphtheria: A Prize Essay. By E. S. Gaillard, M.D., Richmond, Va.—Twelfth Annual Report of the Board of Trustees and Officers of the Southern Ohio Lunatic Asylum, for the year 1866.—Relations which Electricity sustains to the Causes of Disease. By S. Littell.

DEATHS IN BOSTON for the week ending Saturday noon, Jan. 26th, 95. Males, 49—Females, 46. Accident, 1—anæmia, 1—apoplexy, 2—congestion of the brain, 1—disease of the brain, 2—bronchitis, 4—cancer, 4—cholera morbus, 1—consumption, 12—convulsions, 3—croup, 3—cyanosis, 1—debility, 1—dropsy, 3—dropsy of the brain, 4—dysentery, 1—empyema, 2—erysipelas, 1—scarlet fever, 6—typhoid fever, 4—hæmorrhage, 1—disease of the heart, 6—hernia, 1—infantile disease, 4—intemperance, 1—lockjaw, 1—inflammation of the lungs, 6—marasmus, 1—old age, 2—paralysis, 1—puerperal disease, 1—scrofula, 1—smallpox, 2—congestion of the stomach, 1—syphilis, 1—teething, 1—tumor, 1—unknown, 4—whooping cough, 2.

Under 5 years of age, 33—between 5 and 20 years, 8—between 20 and 40 years, 25—between 40 and 60 years, 13—above 60 years, 16. Born in the United States, 66—Ireland, 24—other places, 5.